

## ABSTRACT

[0136] The invention provides isolated protein kinase polypeptides related to novel brain-localized protein kinases homologous to known homeodomain-interacting protein kinases (HIPKs), and the isolated nucleic acid molecules that encode these polypeptides. The novel polypeptides and nucleic acid molecules of the invention are termed HIPK4. The invention also provides genetically engineered expression vectors, host cells, and transgenic animals comprising the novel nucleic acid molecules of the invention. The invention additionally provides antisense and RNAi molecules to the nucleic acid molecules of the invention. The invention further provides inhibitors, activators, and antibodies capable of binding to the protein kinase polypeptides of the invention, and their use in the prevention and treatment of neurological disorders.